Application no 10/642,315
Application Dated August 19,2003
Reply to office action of April 24,2006

Amendments to the specification:

In order to correct grammatical errors the following represents all the paragraphs in amended format please replace the strikethrough portion with the underlined portion and add the portion in curly brackets { }:-

At The current level of technology ~~with~~ of Permanent Pacemaker (PPM) and Implantable Cardioverter-Defibrillator (ICD) ~~there are~~ has two major problems.

BACKGROUND TO INVENTION

~~(A)~~ (1) The battery of {the} pacemaker/ICD decides ~~their~~ its life and change ~~has~~ causes multiple problems {such as :-}

It requires an invasive (surgical) procedure and thus causes complications associated with ~~an invasive procedure~~ it.

Should infection ~~develops~~ develop it becomes a major problem as lead/leads/pocket etc will have to be sacrificed.

~~(B)~~ (2) The follow-up of the patient is a problem {,} due to lack of {a} programmer and skilled manpower in remote areas.

BRIEF SUMMARY OF INVENTION

This pacemaker/ICD will have {a} rechargeable battery and either {a} built-in generator or {an} external source will supply the energy for {its} recharge. Thus the same pacemaker box will continue to work and replacement will not {be} required (~~thus~~ consequently replacement related problems, complications and {additional} cost will be avoided).

With every implant the patient ~~to~~ will receive dedicated programming software and ~~some hardware input~~ a telemetry wand for remote programming. Thus it will reduce {the} cost of follow-up and {it} will be more useful for the patient. In remote areas ~~they~~ patients will not be required to travel large ~~distance~~ distances. Such {a} central remote programming center can offer 24 hour service thus emergency programming will also be ~~easy~~ convenient.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF DRAWING

Figure 1

It shows a PPM/ICD box with {a} built-in generator inside. The magnet is blue and it is surrounded by {a} coil (brown).

Figure 2

It shows the ~~radiological~~ radiologically distinct pole (to be localized on skin using fluoroscopy so that an insulated sterile needle can connect it to an outside power source) Gel like and PVC like material to ensure electrical insulation

Note radiological distinct pole, can of PPM/ICD, gel like material and PVC like material will be in direct contact. The gap in figure ~~is~~ has been shown for clarity.

DETAILED DESCRIPTION OF THE INVENTION

The PPM/ICD will have a rechargeable battery. {Thus} it will need energy for ~~recharge. This energy~~, which will be supplied by {:-}

(A) An internal generator in {the} following way

If in the box of PPM/ICD ~~there is~~ a small magnet {is placed} (which can rotate). A coil encircles this magnet. When {the} battery is nearing the discharge limit, patient ~~sits~~ will sit inside a large radius, circular coil (it also has a fluoroscopy facility ~~to help~~, which helps in proper alignment with the PPM/ICD box). which can move in multiple planes; in a way that magnet in pacemaker/ICD aligns at center and perpendicular ({with the help of} fluoroscopy guidance). The PPM/ICD box will have radiological markers to help in alignment using the fluoroscopy facility of the large radius circular coil. When current passes through the large radius coil, the magnet starts rotating and generates {a} current to recharge the battery of pacemaker/ICD. It will also require one or more of the following changes. :-

Disable {the} magnet circuit or {the} magnet shield {,} for rest of circuit or rectangle becomes magnet on demand i.e. electrical magnet.

The arrangement of magnet and coil can also be the other way round i.e. magnet outside and coil inside.

{OR SECOND METHOD : }

(B) Alternatively at the body of {the} pacemaker two ~~radiological~~ radiologically distinct poles {,} covered by a gel like insulation (Note gel like insulation is further reinforced by PVC like material) for recharging ~~by~~ with an insulated, sterile outside source ~~under~~ by following full aseptic technique.

When ~~the~~ recharge is needed the skin over the box is ~~used~~ handled with full aseptic technique. On skin local anesthesia is administered. Using ~~the~~ fluoroscopy the exact location of {the} two ~~radiological~~ radiologically distinct poles {,} are identified.

A thick needle is used to create a small hole here.

A fine needle is inserted which goes through the insulation up to the pole for recharging.

{The} ~~Above~~ above step is confirmed by ~~the~~ fluoroscopy {,} that the needle has reached the exact spot.

An insulation is gently pushed on the needle. This insulation has thick terminal ~~end~~ ends and it compresses the PVC and gel like insulation on the pole {located} on the PPM/ICD box.

Now an insulated connection is established to supply energy from an outside source.

Note {that} the PVC like insulation will not cover the entire surface of the can of PPM/ICD {,} so that it can be used as an anode or cathode.

This system will be useful {as an alternative if the first suggested option} ~~if~~ the built-in generator malfunctions.

Remote programming

The follow-up of the patient is a problem {,} due to lack of {a} programmer and skilled manpower in remote areas.

Note that a personal computer with multimedia and ~~Internet~~ internet facility is available in almost all parts of the world.

With every implant the patient ~~to~~ will receive

~~One~~ A dedicated programming software [.] which can be on a non rewritable compact disk. His software will be able to work with the any computer mouse/touch screen.

~~One~~ A dedicated telemetry wand [.] which can be attached to {the} widely used IBM/Apple compatible or other computers.

The patient can go to any clinic where a doctor/skilled/semiskilled paramedic is available. He can get connected to the central programming center by an Internet/network connection. The software is on a non rewritable CD so it can not be changed or corrupted. ~~With~~ The telemetry wand and software on CD will establish above connection using locally available personal computer for examination and reprogramming. It will make follow-up of {the} patient easy(widely available technology independent of an onsite programmer and trained PPM/ICD engineer), reduce cost({as} no {need to} travel ~~to distances~~ distant healthcare locations). {easy} thus convenient for the patient as ~~no need for distance travel~~ and a center available 24 hours in {case of} emergency.